

REMARKS

The Examiner objected to claims 17 and 18. These claims have been amended to address these objections.

The Examiner rejected claims 19-20 under 35 U.S.C. 101. These claims have been amended to address these rejections.

The Examiner rejected claims 1-3, 7-8, 13-14 and 17-20 under 35 U.S.C. 103 as being anticipated by Inoue et al. (U.S. Patent No. 6,477,276). The Examiner rejected claims 5 and 15 under 35 U.S.C. 103(a) as being unpatentable over Inoue as applied to claims 4 and 13 above and further in view of Vora (U.S. Patent No. 6,463,162). The Examiner rejected claims 9 and 10 under 35 U.S.C. 103(a) as being unpatentable over Inoue as applied to claims 1 as evidenced by Johnson et al., (“Exploring Steganograph: Seeing the Unseen”). The Examiner rejected claims 11 and 12 under 35 U.S.C. 103(a) as being unpatentable over Inoue as applied to claims 9 above, and further in view of Ohbuchi et al., (“Watermaking Three-Dimensional Polygonal Modals”). The Examiner rejected claim 16 under 35 U.S.C. 103(a) as being unpatentable over Inoue as applied to claims 13 and further in view of Rhoads. (U.S. Patent No. 6,122,403).

As to independent claim 1, this claim has been amended to include additional elements. Applicant notes that Inoue does not consider the relationship between quantized coefficients of adjacent blocks. Naturally, therefore, Inoue does not use the relationship between the quantized coefficients of adjacent blocks to embed a digital watermark. Rather, Inoue independently carries out the embedding of a digital watermark in each of the blocks, and does not compare the coefficients of blocks even when embedding a digital watermark into a group of multiple blocks.

According to the Examiner, Inoue discloses the concept of comparing coefficients between blocks. The Examiner further recognizes that Inoue fails to disclose comparing coefficients, but maintains that Inoue discloses determining a mean or average between coefficients, and comparison of mean values is also possible if individual pieces of data are compared, which implies comparing coefficients.

Inoue, however, does not compare mean values of adjacent blocks. Rather, Inoue compares a mean value M directly obtained from a block and a mean value M' obtained from the

very same block, which has been inverse transformed after embedding a digital watermark. This is quite different in terms of data embedding. Inoue corrects a coefficient q by the plus-minus 1 method depending upon whether the coefficient q , which is obtained by quantizing the coefficient (mean value) M of a DC component, is an odd number or an even number, and whether the data to be embedded is equal to zero or one, so as to embed the target data (see FIG. 5). Here, Inoue utilizes the property of the quantized coefficient q (parity), and Inoue has no concept of comparing coefficients between blocks.

As such, Applicant respectfully submits that the cited prior art fails to teach or suggest “comparing orthogonal transformed coefficients between at least two blocks having a predetermined relationship with each other and making the coefficients satisfy a preset order of magnitude according to bit information specified as the digital watermark” as claimed in claim 1.

Additionally, Inoue embeds a digital watermark into quantized data, and more specifically, into its DC component. Inoue does not embed a digital watermark into a non-zero high-frequency component excluding a DC component. Claim 1 has been amended to make this distinction more clear.

Furthermore, Applicant notes that arguments made in the prior amendment were not addressed by the Examiner. Applicant respectfully requests that the Examiner now consider these arguments and address them. Specifically, Applicant pointed out that contrary to what is stated in the Office Action, Bhaskaran fails to teach or suggest “wherein embedding the bit information is carried out when the quantized coefficients of the at least two blocks are not all equal to zero.” The Examiner argues that Bhaskaran, col. 5, paragraph 2 teaches that in order to keep the compression rate of the encoding of images, watermark data should not be added where DCT coefficients are equal to zero. However, this paragraph indicates that a watermark bit is embedded in the case where the 63rd DCT coefficient is non-zero. However, if the 63rd DCT coefficient is non-zero, then that means that all of the DCT coefficients exist, and they have yet to be quantized. The claimed configuration, on the other hand, embeds a watermark bit in quantized coefficients.

Furthermore, if Bhaskaran’s technique, in which a watermark bit is embedded where the 63rd coefficient is non-zero, is combined with the technique described in Inoue, then the compression effect of JPEG would be incompatible with the embedding of a watermark bit. As such, the combination of these inventions would result in an inoperable invention. As such,

Applicant respectfully maintains that these references cannot be combined in the way outlined in the Office Action.

As such, it is respectfully maintained that independent claim 1 is in condition for allowance.

As to independent claims 17 and 19, these claims have been amended to contain elements similar to that as described above with respect to claim 1. As such, Applicant respectfully submits that claims 17 and 19 are in condition for allowance for the same reasons as claim 1.

Former independent claims 13, 18 and 20 have been amended to depend from claims 1, 17 and 19, respectively.

As to dependent claims 2-16, 18 and 20, these claims are also patentably distinct from the cited references for at least the same reasons as those recited above for the independent claim, upon which they ultimately depend. These dependent claims recite additional limitations that further distinguish these dependent claims from the cited references. For at least these reasons, claims 2-16, 18 and 20 are not anticipated or made obvious by the prior art outlined in the Office Action.

Applicants believe that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
BEYER WEAVER LLP

/Marc S. Hanish/
Marc S. Hanish
Reg. No. 42,626

P.O. Box 70250
Oakland, CA 94612-0250
408-255-8001